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#11831r

File comments.51
Date: 30 Aug 95
The following EPA comments are to the following documents, which were out for public review from July 12 to Aug the 95:
1) "Work Plan for Contract No. DACW45-94-0005 Rapid Response, Omaha District Building 138, Fort Des Moines, Iowa"
2) "Action Memorandum"

The following are annotations to comments from EPA, Region VII dated 10 Aug. 95 to the Corps of Engineers, Omaha District. At the time of these comments the contractor was already mobilized on site initial sampling had begun. The Rapid Response contracting method is a "turn key" kind of concept. Rapid Response, Corps of Engineers, Omaha District has standing indefinite deliverable contracts with two contractors. This allows us to respond quickly to situations meeting the criteria of a "Rapid" project. The work plans are not intended to be as detailed and defined as in a conventional contract. However the contractors are well versed in this type of work and a government on-site representative is with the contractor for the duration of each project. Our contracting method allows us more flexibility to overcome the inevitable "unexpected" items that arise in the field.

At a conference on 14 August 1995, with representatives from the Corps of Engineers, EPA, and Fort McCoy, it was decided that we will follow the guidance in the comments. It was also decided that rather than revising and rewriting the above documents, these annotations and the comments will become part of the final report which documents the project and actions taken in detail.

Action memorandum for Fort Des Moines, Iowa - General Comments beginning on page 1.

1 Noted.
2 All of this information is in the Environmental Investigation, Risk Assessment and Alternatives report (EI/RA/AA). This action memorandum was not meant to encompass the entire site, recommend referring to the EI/RA/AA. This contract covers only areas the contractor was hired to remediate or clean or conduct disposal activities in.

For characterization refer to EI/RA/AA:

3 As requested by Fort McCoy and Fort Des Moines, the contract has been modified to include the small arms firing range sand. Documentation will be in the Final Report.
4 UST's and unrestricted disposal area not in contract (NIC). Refer to EI/RA/AA. Both were previously cleaned up under another contract.
5 Hot spot size has not been delineated, sampling will occur to determine it's size. Small arms firing range NIC, but was added.

Work plan for Rapid Response, Building. 138, Fort Des Moines, Iowa - General comments beginning on page 2.

1 Waste streams will be identified depending on sampling efforts. Contractor is competent in remediation efforts including waste streams, final report will document. Will clarify mixture and segregation to not mix and to segregate. The wastes, characterization, transport and disposal will be documented in the final report.

2 a. We will remove past drums of IDW.

b. TCE is present by monitoring well in the ground water, but is not a contaminant of concern, we are removing sewer line (EI/RA/AA see 3-171). Will provide documentation in the final report of the work performed.

3 Currently being sampled to determine size, will document in the final report.

4 Refer to EI/RA/AA for more information. The work plan is only supposed to document what we expect of this contractor under this contract and is not expected to be all encompassing.

5 The current procedure is to use carbon filter bag, a known effective treatment, and analyze the filter for disposal. Additional water treatment will be determined based on the analytical. The water will be in a closed containerized system, not discharged. Treatment and/or disposal and/or discharge of water will be after analytical. One sample of the water will be taken at end of use and carbon sampling during use, see page 5-2. No discharge on site is planned.

Specific Comments beginning on page 4

1 Refer to EI/RA/AA for more information. No other information on the Barco tenant processed used or actual chemicals an products is known.

2 No work in this contract includes former building 67, it is already park property. The risk analysis indicated no further remediation required. A monitoring well is located in the spot of former building 67 allowing observation of any contaminants on ground water. If off site remediation/removal is needed different funding is needed: formerly used defense site (FUDS).

3 Small arms firing ranges were added to contract.

4 a. As the contamination in dust form, it is anticipated that the dry decontamination would be sufficient. The washing is included only as a precautionary measure. A surfactant mat be utilized for "stubborn stains". No solvent will be utilized.

b. The discharge criteria for both the city and the base water treatment plant are currently being investigated, as well as availability of local, potential off-site disposal facilities. Once analyzed, the waste water will be handled in accordance with the Federal, state and local ARAR's. The basis for selection will be based on the lowest cost for regulatory compliance.

c. No sampling of the elevator shaft will occur. The criteria for "clean" will be based on visual/performance based.

d. The elevator shaft will only be utilized as a sump if it is found to be structurally integral by visual inspection. The sump has been holding liquid for many years.

5. Refer to EI/RA/AA for more information (it discusses about 13 samples in this area). The documents should have been better coordinated, however the actual size of the "hot spot" will be determined based on a 20' o.c. sampling grid. The contractor and on site representative have the EI/RA/AA on site, so there is no need to duplicate information in the work plan.

6. Extensive descriptive data is available and is being used by the contractor, see exhibit D of Appendix A of the work plan. Refer to the sampling plan section 6.0 for the procedures for handling any unidentified materials.

7. The document has been revised to show the test kits to be used. Additional sampling will occur along the sides of the sewer line to determine the extent of the contamination. A staging area will be made that includes a liner location has not been determined.

8. See response to general comment 5.

9. A staging area will be made that includes a liner, location has not been determined. The elevator oil has been sampled and contains pesticides. We will re-sample for an extensive analytical suite for disposal. See sampling plan 5.3.

10. Refer to the EI/RA/AA for more information.

11. a. agreed.

b. agreed action taken will be incorporated into final work plan, see attached fax about separation of contents.

12. Hot spot size see general comment 5 "work plan" response. Field screening is initial sampling, split samples are being sent in, all confirmatory sampling will be lab analysis not kits. Regarding action levels see EI/RA/AA Volume 1, Section 3.1.1. For stockpile soils see sampling plan.

13 Sampling approach will be similar to the "hot spot" approach. Action levels found and used will be documented in the final report. The segregation criteria will be based on location, the overburden is considered clean, the detection kits along with off-site splits will be used to determine lateral and vertical extent.

14. An extensive inventory is in Exhibit D of Appendix A of the Work Plan. "ORD" is an abbreviation for "ordinance", hence, the special handling procedures. Although ordinance is not anticipated, this is a common precaution for this type of activity at DOD facilities. If ordinance is encountered, it will be handled by personnel other than the contractor, OHM.

15. Unknown drums will be handled in accordance with Drum Handling Practices at Hazardous Waste Sites, EPA/600/2-86/013. Information on the specific details of handling were inadvertently not included and will be added to the final report. For soil berm see specific comment 9.

16. Transformers have previously been analyzed, refer to the EI/RA/AA. Segregation refers to the 5 with PCB's. Sampling will only be initiated in the event of a release at which time it will be handled iaw 40 CFR 761 "Spill Clean up Policy."

17. Noted. Can provide POC's on specific issues.

18. Agree. USACE has SOP's for ensuring competency of subcontracts including subcontracting consent forms in the FAR's and verification of CERCLA off site policy compliance.

19. a. Will follow TSKA regulations as applicable. Final report will discuss action taken.

b. Will not mix waste streams, except containerized waste found to be compatible with like waste.

20. As per previous comments. Will not mix waste streams as above.

21. As per previous comments.

22. Will follow regulations, and will document these in the final report.

23. PCB containers will depend on the amount detected, and 20 yard roll-offs are planned for soils. Spill containment measures are being utilized. The PCB and any hazardous soils will have liners and lids..

24. a. Will not mix waste streams.

b. DOT specs. will be based on analytical.

c. See previous comment.

d. Pertinent information will be in the final report.

25. Vendors have not yet been selected. OHM has disposal checklist (attach to this document).

Contractor Sampling and Analysis Plan, General comments beginning on page 11:

1. Noted. Not yet enough info. Will be documented in the final document. Sampling plan is for strategy and procedures not specific locations and numbers etc.

2. Field screening is used as a time and cost saving measure for the determination of preliminary sampling locations sent for off-site analysis.
3. OHM has full set of SOP's separately bound and on site. (Include in the final report.)
4. The decontamination procedures will be selected based on; the equipment to be decontaminated, the expected contaminates, and the analysis performed. Use of solvent and/or nitric acid will be kept to a minimum.
5. The QA/QC samples will include 10% duplicates and 5% matrix spike/duplicate of the confirmation samples only.
6. Refer to EI/RA/AA for more information. Sampling approach will be well documented in the final report.
7. The "test blends" are used to determine wastes' compatibility for bulking.

Specific Comments starting on page 12.

1. The TCE was documented in the EI/RA/AA however it is not a driving contaminate.
2. Small arms firing ranges were not in the original contract but have been added. .
3 See previous comment.
4 The information is presented in later sections
5 Noted. It will be discussed in the final report. The transformers will be lab packed and sent off site.
6 We will use the correct values and will revise the table for the final report. We are using a quick TAT and may not be able to hold for the full time.
7 Correct, the objective is to delineate the "hot spot".
8 a. This is part of the turn-key style of contracting, explained at the beginning of all these annotations.

b. It allows us flexibility to make better choices than the exact grid shown in the plan, for instance: by the fence we only had 10 feet of distance because that is all there was available on base property; we can increase the grid if the sampling area becomes substantially larger; it allows flexibility to choose a more likely area to sample ie. base of a swale, end of an outlet.

c. Field screening is initial sampling, split samples are being sent in, all confirmatory sampling will be lab analysis not kits.

9 The Action Limits are from the EI/RA/AA Table 3-2. See previous comment.
10 This is in the Work Plan page QP 609, referenced on page 3-3. Composite samples from roll-offs are planned.
11 The objective of this sampling is for T&D.
12 The QA/QC samples will include 10% duplicates and 5% matrix spike/duplicate of the confirmation samples only. All sampling and analytical results will be included in the final report.
13. a. Exhibit B is in Appendix B, it is the MSDS's.
b. Will run all 3 for delineation samples.
c. Confirmation samples will be samples over the Action Limits.
d. Field screening will use Millipore kits and use off site analytical with a 24 hour TAT.
e. Confirmation sampling - see previous comment.

14 and 15. Refer to the EI/RA/AA for information on ground water. Will add this information to the final work plan. You are correct the sewer line poses a different risk than soils at surface levels and the issue needs to be revisited. Basis for removal will be discussed in the final report. Side wall sampling in sewer will be added. We are assuming the soil over burden is clean and segregating this soil.

16 a. Will be following Work Plan SOP, page QP 609 - Surface Soil Sampling

b. This is typical procedure in Rapid Response project, because of or Advance agreements with the contractor, our on site representative (who is always there) and the turn key nature of the project, an absolutely fully detailed QA/QC program prior to field investigation is not necessary. The QA/QC samples will include 10% duplicates and 5% matrix spike/duplicate of the confirmation samples.

17 The differences are due to typo's in the table, the table will be revised for the final report. Disposal is the same as for the other soils on the project. QA/QC samples will be the same as for the hot spot.

18 There is a substantial previous amount of analytical on the building preformed finished July 15th 94, by the Omaha District COE, OHM, and the lab was Great Lakes Analytical. Will attach to the final report. No asbestos sampling is planned. Asbestos removal will be by a qualified subcontractor if one can be found to do such a small amount, otherwise the asbestos will be identified in the deed of real estate transfer. During cleaning the asbestos is being encapsulated per letter from the COE IH (Woolcott) to the contractor, which will be included in the final report.

19 The objective is to ensure proper sampling of disposal items. No verification sampling is proposed. The building will have trace level of contaminants left, (lower amounts than are in treated lumber) and during renovation the floors and rafters should be covered with some finish material such as carpet and drywall.

20 One time analysis will be used for most items, then a post treatment analysis. There will be no on-going discharge.

21 See previous comment.

22 Elevator shaft hydraulic fluid has been was sampled, they finished July 15th 94, the lab was Great Lakes Analytical. Will attach to the final report.

23 and 24. An extensive inventory is in exhibit D of Appendix A of the Work Plan. QA/QC sampling was previously done. Much of the inventory is labeled, we will sample unknowns. The test blend will be clarified in the final report, but is a small potions of the waste are combined and watched for reaction, by the on site chemist .

25 If remote punching and normal sampling is used, we will attach OHM's SOP to the final work plan, although not expected to be necessary. We will follow the SOP if actions remote punching is necessary.

26 See previous comment.

27 These samples are from an entire base wide sweep, and most were not exposed to any of the chemicals of concern on the project. They also do not represent the source of contamination. Most have labels and are common house-hold variety products. Bulk composites will be analyzed for disposal and that analysis will include the chemicals of concern.

28 See previous comments.

29 and 30. Transformers have previously been analyzed, refer to the EI/RA/AA. Transformers will be lab packed and shipped off site for disposal. Previous analytical done during the EI/RA/AA is being requested from the Army Environmental Center.

31 The action limits are from Volume 1, Table 3-2, based on unrestricted outdoor use. Will address discrepancy in the final report. If staining is spotted under the transformer during a visual inspection the soil will be sampled. No confirmatory sampling is planned, we are sending off site for disposal.

32 PCB sampling will be iaw PCB clean up guidance by EPA, data was not included because no sampling is expected.

33 Agree. Will revise in final report. See previous comment.

34 Previous comment.

35 Unfortunately the IDW sat too long without doing disposed of and the previous analytical has expired. We will use field data to bulk IDW, re-sample, and dispose.

36 Will clarify mixing, segregation and bulking in the final report.

37 Agree. Will call the section "Sample Tracking Procedures" in the final report.

38 a. Total samples to be collected will be dependant on the T&D facility.

b. Composite samples will be collected for the non-volatile analyses, individual grabs for volatile.

c. No QA/QC samples will be taken, data exists already - in final report correct method for VOC's is 8240.

39. a. See general comment #4.

b. Sample preservation requirements for aqueous samples are presented in table 2.1, all others only require chilling. Exhibit A is the cover page in front of the SOP's.

40 See previous comments on QA/QC. Because the lab had not been selected at the time of this documents' publication, specifying PARCC goals could unduly restrict laboratory selection. See previous comment.

41 See previous comments.

TO: MARY DARLING
FROM: JOE NOLAN

MILLIPORE

EnviroGard™ DDT in Soil Test Kit

ENVR 000 31

Intended Use

The EnviroGard DDT in Soil Test Kit is a qualitative or semi-quantitative field test for the detection of DDT and its metabolites DDD and DDE in soil. The EnviroGard DDT in Soil Test Kit allows rapid semi-quantitative screening for DDT at 0.2, 1.0, and 10.0 parts per million (ppm) in soils.

Test Principles

The EnviroGard DDT in Soil Test Kit is based on the use of polyclonal antibodies that bind either DDT or DDT-Enzyme Conjugate. These antibodies are immobilized to the walls of the test tubes. When DDT is present in the sample, it competes with the DDT-Enzyme Conjugate for a limited number of antibody binding sites.

- A sample containing DDT is added to a test tube containing Assay Diluent. DDT-Enzyme Conjugate is then added to the test tube. The DDT-Enzyme Conjugate competes with the DDT for the antibody binding sites.
- After the incubation, the unbound molecules are washed away.
- A clear solution of chromogenic Substrate is then added to the test tube. In the presence of bound DDT-Enzyme Conjugate, the clear Substrate is converted to a blue color. One enzyme molecule can convert many Substrate molecules.

Since there are the same number of antibody binding sites on every test tube and each test tube receives the same number of DDT-Enzyme Conjugate molecules, a sample that contains a low concentration of DDT allows the antibody to bind many DDT-Enzyme Conjugate molecules.

Therefore, a low concentration of DDT produces a dark blue solution. Conversely, a high concentration of DDT allows fewer DDT-Enzyme Conjugate molecules to be bound by the antibodies, resulting in a lighter blue solution.

NOTE: Color is inversely proportional to DDT concentration.

Darker color = Lower concentration
Lighter color = Higher concentration

Performance Characteristics

The EnviroGard DDT in Soil Test Kit will not differentiate between DDT, its metabolites, and other structurally similar compounds, but will detect their presence to differing degrees. The following table shows a number of compounds and the approximate concentration of each required to yield a positive result (Lower Limit of Detection or LLD), and the concentration required to inhibit one-half of the color developed by the Negative Control (IC50). Concentration is in parts per million (ppm) in soil.

Compound	LLD	IC50
p,p'-DDT (kit calibrator)	0.04	1.25
p,p'-DDD	0.01	0.3
p,p'-DDE	0.18	3.6
o,p'-DDT	4	93
o,p'-DDD	0.4	11
o,p'-DDE	3	93
DDA	0.002	0.04
Chloropropylate	0.007	0.08
Chlorobenzilate	0.03	0.35
Dicofol	0.14	2
Tetradifon	1.2	14
Thiobencarb	5	52
Tebuconazole	7	95
Neburon	17	284
Chloroxuron	24	716
Monolinuron	25	714
Diclofop	70	>1000

The following compounds have lower limits of detection > 100 ppm.

2,4 D	4-chlorophenoxyacetic acid
Chlorbromuron	Chlordane
Chlortoluron	Dicamba
Diflubenzuron	Diuron
Lindane	Linuron
MCPA acid	MCPB
Mecoprop	

Precautions

- Treat DDT, solutions that contain DDT and potentially contaminated soil samples as hazardous materials
- Where appropriate, use gloves, proper protective clothing, and methods to contain and handle hazardous material.
- Store all test kit components at 4°C to 8°C (39°F to 46°F) when not in use.
- Do not freeze test kit components or expose them to temperatures greater than 37°C (99°F)
- Allow all reagents to reach ambient temperature (18°C to 27°C or 64°F to 81°F) before beginning the test.
- Do not use test kit components after the expiration date.
- Do not use reagents or test tubes from one test kit with reagents or test tubes from a different test kit.
- Use approved methodologies to confirm any positive results.
- Do not dilute or adulterate test reagents or use samples not called for in the test procedure; this may give inaccurate results.
- Tightly recap the DDT calibrator vials to prevent evaporative loss.
- Distribution of DDT in soils may be highly variable. The use of a composite sampling technique may be appropriate. Development of a sampling plan that assures adequate sample number and distribution is the responsibility of the analyst
- DDT is light sensitive. Store soil extracts at 2°C to 7°C, shielded from direct light.

Materials Provided

EnviroGard DDT in Soil Test Kit

This test kit contains the following items.

20 Antibody-Coated Test Tubes
1 vial of Assay Diluent
1 vial of Negative Control (methanol)
1 vial of 0.2 ppm DDT Calibrator in methanol
1 vial of 1.0 ppm DDT Calibrator in methanol
1 vial of 10.0 ppm DDT Calibrator in methanol
1 vial of DDT Enzyme Conjugate
1 vial of Substrate
1 vial of Stop Solution
1 20-place Test Tube Rack
22 Pipette Tips, yellow (for the Gilson M-25 Microman® Positive Displacement Pipettor)

Materials Required and Ordered Separately

See "Ordering Information" for the appropriate catalogue numbers.

EnviroGard Soil Extraction Bottle Kit

Use this kit for the extraction of DDT in soil samples. This kit contains enough devices to process 14 samples:

- 14 30 milliliter (mL) LDPE Bottles with screw caps (each bottle contains stainless steel mixing beads)
- 14 filtration caps
- 14 Millex® HV13 filters
- 18 Wooden Spatulas
- 1 Syringe with coupler
- 1 Syringe coupler
- 14 Screw Top Glass Vials, 4.0 mL
- 14 Stoppers
- 18 Weigh Boats

Methanol

ACS reagent grade Methanol is required for soil extraction, but is not included in the EnviroGard Soil Extraction Kit. You must order it separately. (See "Ordering Information")

Materials Required but Not Provided

You will also need several other items, some of which are included in the EnviroGard Soil Field Lab. (See "Ordering Information" for the appropriate catalogue number)

- Gilson M-25 Microman Positive Displacement Pipettor
- Eppendorf™ Repeater® Pipettor and five Combitips® (3 x 12.5 mL, 1 x 5.0 mL, and 1 x 50 mL)
- Balance capable of accurately weighing 5 grams
- Millipore Differential Photometer or Enviro-Quant Photometer
- Indelible marker for labeling test tubes
- Watch or timer
- Clean running water or a wash bottle containing tap or deionized water (500 mL)
- Calculator (optional)

Suggestions for Pipettor Use

- Practice using both pipettors (positive displacement and Repeater pipettor) with water and extra tips before you analyze your samples.
- Use a new tip each time you use the Repeater pipettor to avoid reagent cross-contamination. Label three 12.5 mL tips "Diluent", "Substrate" and "Stop," and one 5.0 mL tip "Conjugate".
- Draw the desired reagent volume into the Repeater pipettor and dispense one portion of the reagent back into the container to properly engage the ratchet mechanism. If you do not do this, the first volume delivered may be inaccurate.
- To add reagents using the Repeater pipettor, pipette down the side of the test tube just below the rim.
- To add samples and calibrators using the positive displacement pipettor, pipette down the side of the test tube just above the liquid level.
- The carryover volume of the positive displacement tips is minimal, but may affect results if you are going from a high to low DDT concentration. Use a new pipettor tip each time you pipette a new unknown.

Assay Procedure

Collect/Store the Sample

1. Collect soil in appropriately-sized and labeled containers.
2. Take care to remove excess twigs, organic matter and rocks or pebbles from the sample. For best results, wet soils should be air-dried overnight and thoroughly mixed before testing.
3. Store soil samples at 4°C (39°F).

Prepare the Sample/Extract the Soil

1. Please follow the instructions from the EnviroGard Soil Extraction Bottle Kit to prepare the soil extract before the assay.
2. **5 mL** of **Methanol** will be used to extract DDT residue from a 5 gram soil sample. As per instructions, attach a **50 mL** Combitip to the Repeater pipettor and set the dial to **5**. Deliver once to add **5 mL** of **methanol** to the extraction vial, and cap tightly.

Perform the Test

NOTE: Allow all reagents and sample extracts to reach room temperature before you begin the test. Do not analyze more than 20 test tubes at a time.

1. The choice of calibrators to use in the test will depend on the the selection of the analyst. The use of two calibrators may be appropriate if screening for a single level of DDT.

   Remove the test tubes from the plastic bag and label them as follows*:

Tube Label	Tube Contents
NC	Negative Control
C1	0.2 ppm Calibrator
C2	1.0 ppm Calibrator
C3	10.0 ppm Calibrator
S1	sample 1
S2	sample 2
etc.	

   * You are not required to perform the assay in duplicate, however, doing so will increase the precision.

   Place the test tubes in the test tube rack. Push down on each tube so that it is held firmly and does not fall out of the rack when shaken.

CAUTION: Do not "snap" the test tubes into the rack as this may result in a cracked tube.

2. Attach the **12.5 mL** Combitip labeled "Diluent" to the Repeater pipettor and adjust the dial to 2. Add 500 microliters (µL) of Assay Diluent to each test tube.
3. Attach a clean pipette tip to the Microman pipettor and adjust the dial to "250". Add 25 µL of each calibrator (including Negative Control) to the corresponding test tube by placing the end

of the pipette tip against the side of the tube (just above the level of the Assay Diluent) and dispensing the volume. Use a clean pipette tip each time.

CAUTION: Replace the caps on the calibrator vials immediately after use to minimize evaporation.

4. Using a clean tip for each sample, add 25 µL of each sample extract to the appropriately labeled test tube.

5. Attach the **5.0 mL** Combitip labeled "Conjugate" to the Repeater pipettor and adjust the dial to **1**. Add 100 µL of DDT-Enzyme Conjugate to each test tube.

6. Shake the test tube rack to mix for 10 to 15 seconds. Leave the test tubes undisturbed for 15 minutes.

7. Vigorously shake out the test tube contents into a sink or suitable container. Fill the test tubes to **overflowing** with cool tap or distilled water, then decant and vigorously shake out the remaining water.

   Repeat this wash step three more times, being certain to shake out as much water as possible on each wash. After the final wash, remove as much water as possible by tapping the inverted tubes on absorbant paper.

8. Attach the **12.5 mL** Combitip labeled "Substrate" to the Repeater pipettor and set the dial to **2**. Add 500 µL of Substrate to each test tube. Leave the test tubes undisturbed for 10 minutes.

NOTE: If a blue color does not develop in the Negative Control test tube within 10 minutes after adding the Substrate, the test is invalid and you must repeat it.

Interpret the Results

You can either interpret the results visually within 10 minutes after adding the Substrate to each test tube, or you can perform a more precise analysis with a photometer after you add the Stop Solution.

Visual Interpretation

After you add the Substrate, wait 10 minutes then mix the test tubes by shaking them for a few seconds until they are a uniform blue color. Compare the sample test tube to the calibrator test tubes against a white background. The test tube rack in the kit is well suited for this purpose.

NOTE: The word DDT in the interpretation instructions below refers to "total DDT", i.e. the sum of *p,p'*-DDT, *p,p'*-DDD, and *p,p'*-DDE.

- If a sample test tube contains *more* color than the calibrator test tube, the sample contains DDT at a concentration *lower* than the calibrator.
- If a sample test tube contains *less* color than the calibrator test tube, the sample may contain DDT at a concentration *greater* than the calibrator.
- If the sample test tube contains color that is between the calibrator test tubes, the sample contains DDT at a concentration between the calibrator concentrations.
- If a sample test tube contains *approximately the same* amount of color as the calibrator test tube, the sample contains DDT at a concentration *approximately equal* to the calibrator.
- If the sample test tube contains less color than the 10 ppm Calibrator test tube, you may dilute a fraction of the soil extract in methanol (for example, 1:100) and perform the assay again. To determine the concentration of the diluted extract multiply the result by the dilution factor. (Go to "Semi-Quantitative Interpretation" for further details.)

Photometric Interpretation

After you add the Substrate, wait 10 minutes then add the Stop Solution to each test tube.

WARNING: Stop solution is 1N Hydrochloric acid. Handle carefully.

Attach the **12.5 mL** Combitip labeled "Stop" to the Repeater pipettor and set the dial to **2**. Add 500 µL of Stop Solution to each test tube. This converts the blue color in the test tubes to yellow.

NOTE: After you add Stop Solution to the test tubes, results should be read within 30 minutes.

Millipore Differential Photometer

1. Place a water blank test tube containing 1.5 mL of Milli-RO® or Milli-Q® water, or equivalent in the left (reference) well.
2. Place the Negative Control test tube into the right (sample) well. Record the optical density (OD) of the Negative Control.
3. Remove the Negative Control test tube and replace it with the 0.2 ppm Calibrator test tube

to reactivate the photometer. Record the result. Repeat this step to determine the OD for each of the remaining calibrators and for each sample.

Semi-quantitative Interpretation

Compare the OD of each sample to the OD of each calibrator.

NOTE: The word DDT in the interpretation instructions below refers to "total DDT", i.e. the sum of *p,p'*-DDT, *p,p'*-DDD, and *p,p'*-DDE.

- If a sample OD is *equal* to the OD of a calibrator, the sample contains DDT at a concentration *approximately equal* to the calibrator.
- If a sample OD is *greater* than a calibrator OD, the sample contains *less* DDT than the calibrator.
- If a sample OD is *lower* than a calibrator OD, the sample may contain *more* DDT than that calibrator.
- If an assay result indicates that a soil sample contains greater than 10 ppm total DDT, but you need more specific information, the soil extract may be diluted 1:100 in neat methanol, and assayed again. You must then multiply the results of the re-assay by 100 to determine the approximate sample concentration.

NOTE: If you know in advance that the "action level" of interest is greater than 10 ppm total DDT in soil, the assay may be modified to pinpoint that particular concentration. For example:

If you wish to categorize samples as less than or greater than 250 ppm, you should dilute all sample extracts 1:250 in neat methanol (e.g. 20 µL extract plus 4.98 mL methanol) and compare the diluted extracts to the 1 ppm DDT kit calibrator. Due to the 250 fold dilution, the 1 ppm calibrator represents 250 ppm in the assay.

NOTE: If you are interested in action levels greater than 1000 ppm, please contact Millipore Technical Services for assistance.

Example

Actual OD values will vary. This data is for demonstration purposes only.

Tube	OD	Interpretation
NC	0.90	
C1 (0.2 ppm)	0.75	
C2 (1.0 ppm)	0.49	
C3 (10.0 ppm)	0.35	
S1	0.68	>0.2 ppm < 1.0 ppm
S2	0.16	> 10.0 ppm

NOTE: The EnviroQuant Photometer is also available from Millipore. This dual wavelength instrument measures the OD at 450 nanometers (nm) minus 600 nm of all samples and calibrators, and provides a printout of results. See "Ordering Information" for the appropriate catalogue number.

Limitations of the Procedure

The EnviroGard DDT in Soil Test Kit is a qualitative/semi-quantitative screening test only. Actual quantitation of DDT by EnviroGard immunoassay is not possible due to the Test kit's cross-reactivity with DDT breakdown products and other similar compounds and to the variations in extraction efficiency inherent in the fast extraction protocol described in this product insert.

Soil sampling error may significantly affect testing reliability. The distribution of pesticides in different soils can be extremely heterogeneous. Soils should be dried and homogenized before analysis by any method. Split samples (i.e. for GC and immunoassay) should always derive from the same homogenate.

Ordering Information

The following table lists descriptions and catalogue numbers for the EnviroGard DDT in Soil Test Kit, Soil Extraction Bottle Kit and related products.

Description	Catalogue Number
EnviroGard DDT in Soil Test Kit	ENVR 000 31
EnviroGard Soil Extraction Bottle Kit	ENSP 000 30
Methanol for soil extraction, 100 mL bottle	ELCR 000 07
Millipore Differential Photometer: • 115 volt (V), or • 230 V	 ENVR 000 00 ENVR 002 30
EnviroQuant Photometer, 110V, or EnviroQuant Photometer, 220V	ENVR T11 00 ENVR T22 00
EnviroQuant Replacement Paper, 12 rolls	ENVR T1: 02
Positive Displacement Precision Pipettor, Adjustable (2-250 µL) Repeater Pipettor EnviroGard Replacement Pipettor Tips (available separately): • Positive displacement pipettor tips, 1-25 µL range 200/pk (not preassembled) • Repeater pipettor tips, 5.0 mL, 100/pk • Repeater pipettor tips, 12.5 mL, 100/pk • Repeater pipettor tips, 50 mL, 10/pk	ENVR SP0 06 ENVR SP0 01 ENVR L04 09 ENVR L01 09 ENVR L02 09 ENVR L03 09
EnviroGard Soil Field Lab includes: • 1 Portable balance with 100 gram calibrator weight • 1 Eppendorf Repeater pipettor • 3 5.0 mL Pipette tips for the Repeater pipettor, for 0.1 mL through 0.5 mL dispensing volumes • 6 12.5 mL Pipette tips for the Repeater pipettor, for 0.25 mL through 1.250 mL dispensing volumes • 1 50 mL Pipette tip for the Repeater pipettor, for 1.0 mL through 5.0 mL dispensing volumes • 1 Positive displacement precision pipettor, adjustable (2-250 µL) • 1 Electronic timer • 6 Polystyrene test tubes, 12 mm X 75 mm (for blanking the spectrophotometer and sample dilutions) • 4 Test tube racks, six-position • 1 Wash bottle, 500 mL • 1 125 mL large mouth bottle • 2 Work stations • 1 Soil extraction rack Contact Millipore Technical Service for kit component replacement or reordering information. (See the "Technical Assistance" section for the number of the Millipore office nearest you.)	ENVR L00 09

Technical Assistance

To Place an Order or Receive Technical Assistance, call the nearest number listed below.

IN THE U S AND CANADA

Call toll-free **800-MILLIPORE** (800-645-5476)
In the U.S. FAX Orders (617) 533-8873
In Canada FAX Orders (613) 225-9366

Millipore Worldwide:

Australia
A•C•N. (001) 239-818
Toll Free (008) 222-111
In Sydney Area (02) 428-7333

Austria, Central Europe, C.I.S., Africa, Middle-East, and Gulf
In Austria: (43) 1-877-8926

Baltic Republics
In Finland: (358) 0 8045110

Belgium and Luxembourg
(02) 726 8840

Brazil
(011) 548-7011

Canada
Toll Free 1-800-645-5476
In Toronto Area: 416-678-2161

China, People's Republic of
Beijing: (86) 1 5008063
Guangzhou: (86) 20-686217
Shanghai: (86) 21-3737256

Czech Republic
(42) 2-35-02-27
(42) 2-35-25-75

Denmark
(46) 59 00 23

Finland
Tel (90) 8045110

France
(1) 30-12-70-00

Germany
(06196) 494 0

Hong Kong
(852) 2803-9111

Hungary
(36) 11-62-06-86

India
Bangalore:
(812) 394657

Italy
Milano: (02) 25078-1
Roma: (06) 5203600

Japan
(03) 3474-9111

Korea
(82-2) 5548305

Malaysia
(60) 3-7571322

Mexico
(525) 576-96-88

The Netherlands
(01608) 22000

Norway
472- 267-82-53

Poland
(48) 2-669-12-25
(48) 2-663-70-31

Puerto Rico
809-747-8444

Singapore
(65) 253-2733

Spain
Madrid: 91 729-03-00
Barcelona: 93-325-96-16

Sweden
Sundbyberg
08-628-69-60

Switzerland
(01) 945 3242

Taiwan
(886-2) 7001742

U K and Ireland
(0923) 816375

United States of America
Toll Free
1-800-MILLIPORE
(800-645-5476)
In Puerto Rico
(809) 747-8444

In All Other Countries:

Millipore Intertech, U.S.A.
(617) 275-9200

General Limited Warranty

Millipore Corporation ("Millipore") warrants the products manufactured by it against defects in materials and workmanship when used in accordance with the applicable instructions for a period of one year from the date of shipment of the products or where applicable, for a period not to extend beyond a product's printed expiration date. **MILLIPORE MAKES NO OTHER WARRANTY, EXPRESSED OR IMPLIED. THERE IS NO WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.** The warranty provided herein and the data, specifications and descriptions of Millipore products appearing in Millipore's published catalogues and product literature may not be altered except by express written agreement signed by an officer of Millipore. Representations, oral or written, which are inconsistent with this warranty or such publications are not authorized and if given, should not be relied upon.

In the event of a breach of the foregoing warranty, Millipore's sole obligation shall be to repair or replace, at its option, any product or part thereof that proves defective in materials or workmanship within the warranty period, provided the customer notifies Millipore promptly of any such defect. The exclusive remedy provided herein shall not be deemed to have failed of its essential purpose so long as Millipore is willing to repair or replace any nonconforming Millipore product or part. **Millipore shall not be liable for consequential, incidental, special or any other indirect damages resulting from economic loss or property damage sustained by a customer from the use of its products.** However, in some states the purchaser may have rights under state law in addition to those provided by this warranty

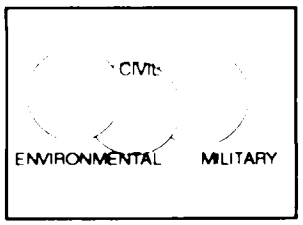
Safety

To receive complete safety information on this product, contact the nearest Millipore office and request Material Safety Data Sheet documents P70002, P34782, P34207 and P34210.

Acknowledgment

This kit was developed in collaboration with the Commonwealth Scientific and Industrial Research Organization (Australia) using reagents produced and supplied under exclusive license to Millipore and ImmunoSystems Incorporated.

P35409, Rev - 3/16/95



DEPARTMENT OF THE ARMY
RAPID RESPONSE

CORPS OF ENGINEERS, FORT CROOK AREA
P.O. BOX 13287
OFFUTT AFB, NE 68113

FACSIMILE TRANSMITTAL HEADER SHEET

For use of this form, see AR 25-11; the proponent agency is OCIM-A

COMMAND/ OFFICE		NAME/ OFFICE SYMBOL		OFFICE TELEPHONE NO		FAX NO
FROM: US Army Corps of Engr., Fort Crook Area Office, Omaha District		Mary Nelson Darling CEMRC-CO-FC-R		(402) 293-2513		(402) 291-8137
TO: Multiple		Joe Nolan Greg Hall Jerry Resnik Greg Norden		(515) 285-1863 (515) 285-1948 (419) 424-4940 (419) 425-6067		(515) 285-0692 (515) 285-0692 (419) 425-6087 (419) 424-4965
CLASSIFICATION	PRECEDENCE	NO. PAGES	DATE/TIME	MONTH	YEAR	RELEASER'S SIGNATURE

REMARKS:

Building 138 items to be retained:

Referring to the work plan all materials in Building 138 were to be decontaminated and staged (see page 3-5) work plan. This is because it is not economical dispose of all the contents as f listed. To save the work of cleaning everything, the known items in the building have been broken down into the following categories. This list was coordinated with Dave Puckered, USACE (BRAC PM), Bill Rafferty (USACE historic stabilization PM), Jim Beran USACE (chemist) and partially with Robert Wells @ Fort McCoy.

There are three categories of items form 138:

1. RCRA disposal of Hazardous waste: Listed and .50 to 3.00 a pound to dispose of.

   a. disposal above LDR's (incineration)

   b. disposal below LDR's (direct sub-title C landfill)

2. Hazardous Debris to be cleaned and disposed of as Solid Waste. For non porous materials this is much cheaper than disposing as RCRA Hazardous waste. Refer to CFR 40 parts 260-299 page 268.45 table 1. Under item 2 "Chemical Extraction" it indicates that it indicates Glass, Metal, Plastic, and Rubber need be cleaned to a "clean debris surface" See definition at the end of the Table. Water washing (per work plan) should be enough. The following items will be cheaper to clean than not clean.

3. Items to be retained for historical value, reuse, or salvage. Refer to CFR 261.2 items that are not solid waste, CFR 261.6 Requirements for recycling materials.

See lists of items on the next page. A representative from USACE will visit next week to determine items retained for historical value, and kept on site for future use or turned over to Fort McCoy.

Building 138 items for each categories.

1. RCRA disposal of Hazardous waste: Listed and .50 to 3.00 a pound to dispose of.

   a. disposal above LDR's (incineration)

   b. disposal below LDR's (direct sub-title C landfill)

Rope
Snow fencing
Small thin pieces of wood, wood debris
Drywall
Insulation
cardboard/paper
un-cleanable unsalvageable metal (such as with more than 5% rust)
concrete

2. Hazardous Debris to be cleaned and disposed of as Solid Waste. (clean then dispose of)

aluminum and glass windows
toilet fixtures
plumbing fixtures
unsalvageable empty containers
rubber (tires)
glass

3. Items to be decontaminated and retained for historical value, reuse, or salvage.

Signage (painted plywood)
Wood doors
Slate shingles
Wood window screens
gutters and downspouts if any
flashing if any
Copper wire/Brass items
electrical porcelain insulators
Timbers - vacuumed only
Brick matching building

Bob Hoke	EPA
James O'Neal	USACE, Ft. Crook
Mary Jo Kwilosz	"
Lisa Beran	"
Dennis Stone	Ft. McCoy
Dell Correll	" "
Joe Nolan	USACE
Jerry [illegible]	[illegible]
[illegible]	[illegible]
Jim Woodruff	USACE